

SC Review of Energized Electrical Work

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Safety & Health Services Division

Schedule

- Review scheduled during week of 4/18/05 - 4/22/05
- Total of 4 Auditors
 - Lead auditor is Richard Stark
- Daily debriefing meetings (POCs should attend)
- Draft report will be provided at end of review
- BNL factual accuracy review of draft report completed within 5 working days
- Final report will be issued approximately 10 working days after review

Purpose of the review

- Review being performed at the request of Ray Orbach.
- To provide an independent assessment of planning and performance of energized electrical work.
- Scope developed in response to recent accidents and occurrences involving energized work.

Scope

- Review and evaluate documentation
- Interview Lab Management, staff, subcontractors, and workers conducting energized work
- Review lab management systems and mechanisms for providing feedback and maintaining work controls
- Observe energized electrical work / other electrical work

Scope

- Evaluate subcontractor work, procedures, selection and oversight of subcontractors
- Review effectiveness of completed corrective actions from previous incidents and assessments
- Review employee and subcontractor electrical safety training and qualification

Information already provided:

- All procedures for energized electrical work (C-AD, EP, NSLS, Physics)
- All energized electrical work permits that were approved, and all permit applications that were rejected
- Copies of ESH 1.5.0, 1.5.1 and 1.5.3
- Electrical safety requirements in the laboratory contract
- Electrical safety requirements in contracts with subcontractors
- Copies of electrical safety related assessments
- Requirements on lab oversight of contractors
- Org charts showing the level where preparers and approvers of energized electrical work permits are located.

Additional Requested information

- Documentation on training:
 - A written description of the Laboratory's employee training program - how it is managed and implemented, i.e., roles and responsibilities within the training program, and also for line management, employees, etc.
 - The Laboratory's training catalog

Additional Requested information

- Listings of required electrical safety training for both "unqualified" and "qualified" persons, as defined by NFPA 70E.
- Outlines of those training courses covering the performance of energized electrical work.
- Examples of internal / external oversight of the training program with respect to electrical safety.

Preparation for review

- Dept. / Div. identify a POC
- Provide supplemental briefing to department /division personnel
- Assure electrical workers (employees and contractors) take updated Electrical Safety I course
- ESH&Q will host several classroom trainings for Electrical Safety I
- Personnel to be interviewed:
 - Lab Director, LESC, Laboratory Training Manager, ES&H organization, electrical workers (laboratory and subcontractor)

Preparation for review

- Departments / Division perform self assessment
 - Self assessment Aid
 - Appendix B - Questions and LOI
- SHSD to prepare briefing sheets
- Department / Division ESH staff should prepare presentation on department's electrical safety program
- Identify personnel to be interviewed
- Identify electrical work that will take place during week of 4/18/05

Issues:

- **Training:** web based training must be augmented by job training
- Laboratory wide electrical safety goals and performance metric for electric safety:
 - Correct electrical safety OSHA deficiencies by 2/06
 - Provide training for performing arc flash calculations by 5/05
 - Develop program for local Authority Having Jurisdiction to accept non-listed equipment by 6/05

Issues:

- Worker participation - JRA, work planning
- Subcontractor access to ESH procedures
- LESO is the point of contact for NFPA 70E issues, Supported by LESC.
- Accountability for electrical safety?
- Hazard analysis - use NFPA 70E PPE tables until arc-flash calculations can be done
- Energized work permit being updated
- Pre-job brief required, PPE identified

Issues:

- Testing of gloves and insulated tools
- Testing and troubleshooting procedures
- Lessons Learned on SLAC event - did all electrical workers attend/view it online?
- Service technicians / contractors - how do we verify training? Require them to take Electrical Safety I prior to conducting work
- Screening for work permit is now included on Visitor Notification Form.